



FW-HTF Metrics for Success

*A conversation
about outcomes*

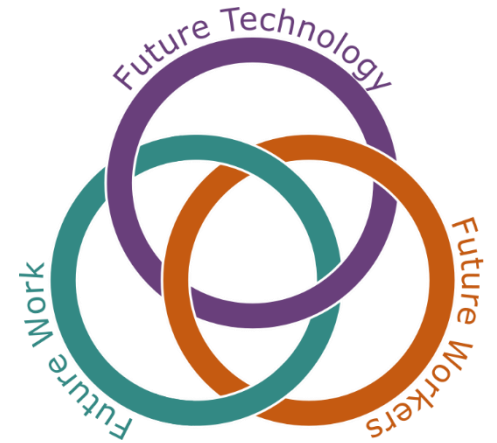
Jordan M. Berg
*Program Officer
Future of Work at the Human-
Technology Frontier: Core Research
21 April 2022*

Outline

1. FW-HTF: Success = Interdisciplinarity
2. Representing Interdisciplinarity of **Projects**
3. Representing Interdisciplinarity of **Products**
4. Discussion

What is a successful FW-HTF project?

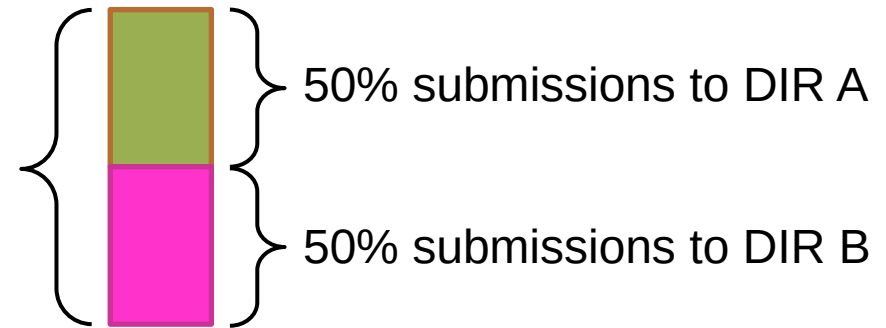
- Capture what is special to FW-HTF
- FW-HTF emphasizes **convergence research**
- Nucleating and nurturing interdisciplinary teams
- Rewarding cross-disciplinarity in individuals
- Major consideration in making awards – *what happens next?*



A successful project is an interdisciplinary project

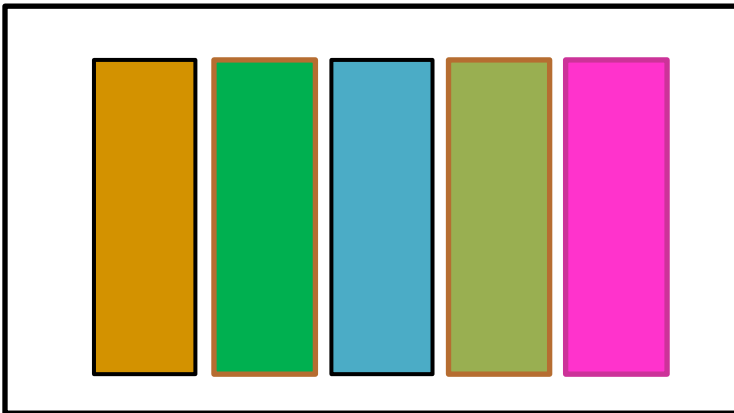
Representing Interdisciplinarity of Projects

- “You are what you propose”
- PI disciplines defined by NSF submission history
- Each PI is represented as a colored bar
- Directorates represented by different colors



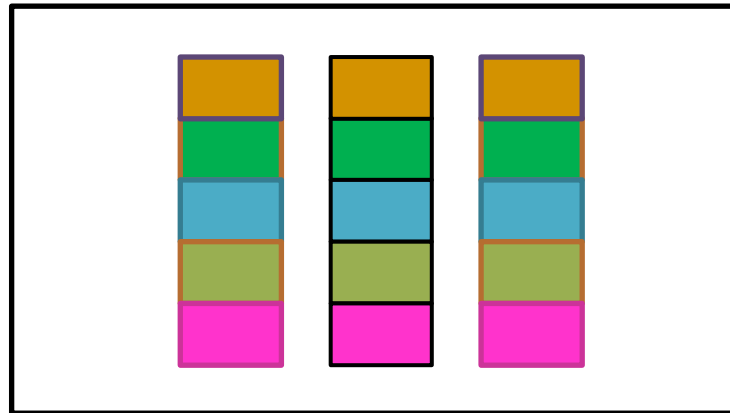
Multidisciplinary

Each Investigator only submits to one directorate



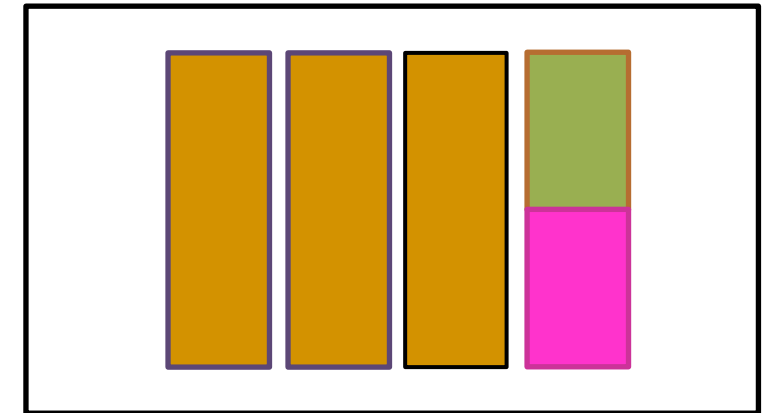
Interdisciplinary Convergent

Each Investigator submits many directorates

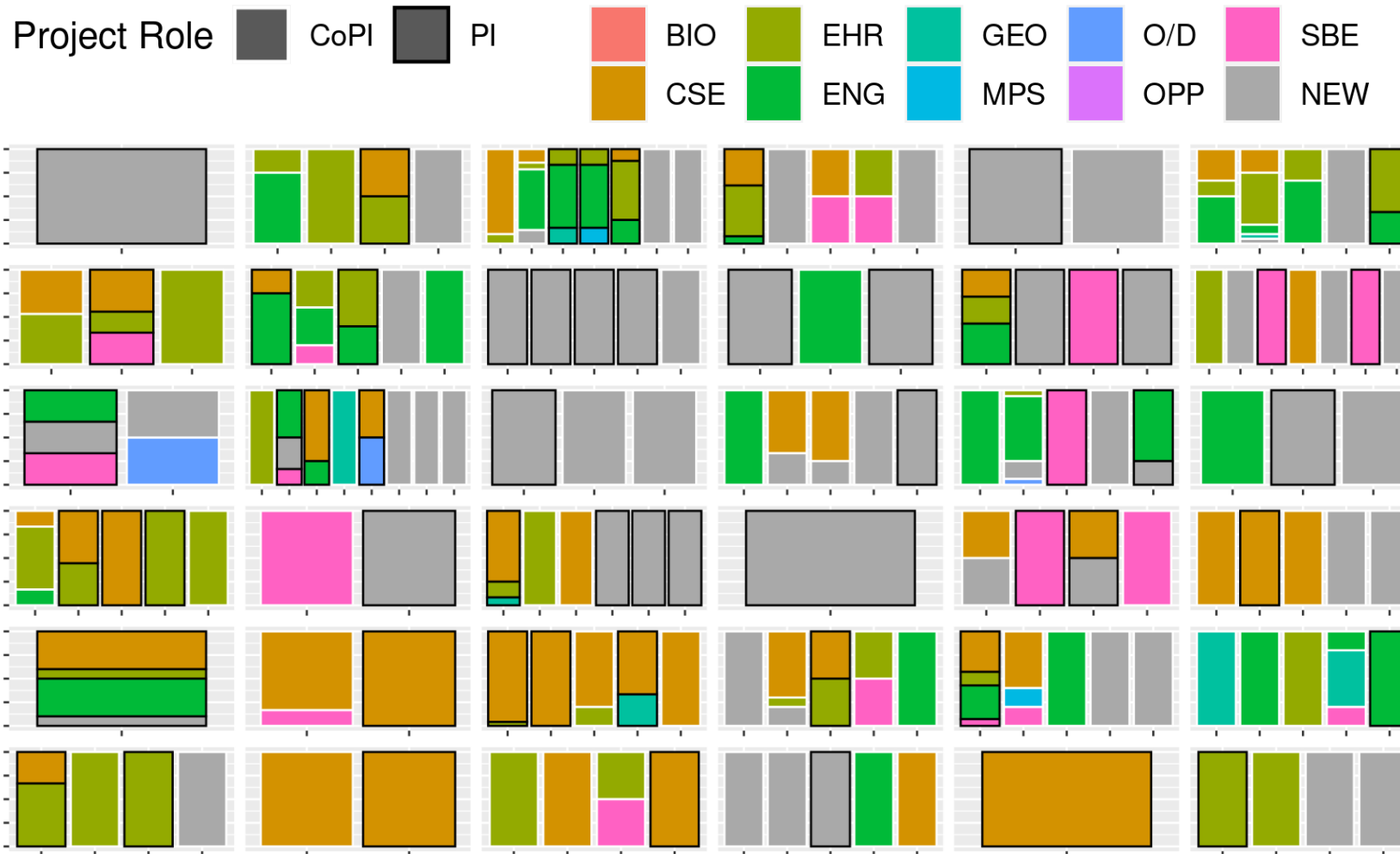


Mostly Monodisciplinary

Most Investigators submit to the same directorate, one Investigator submits to other directorates



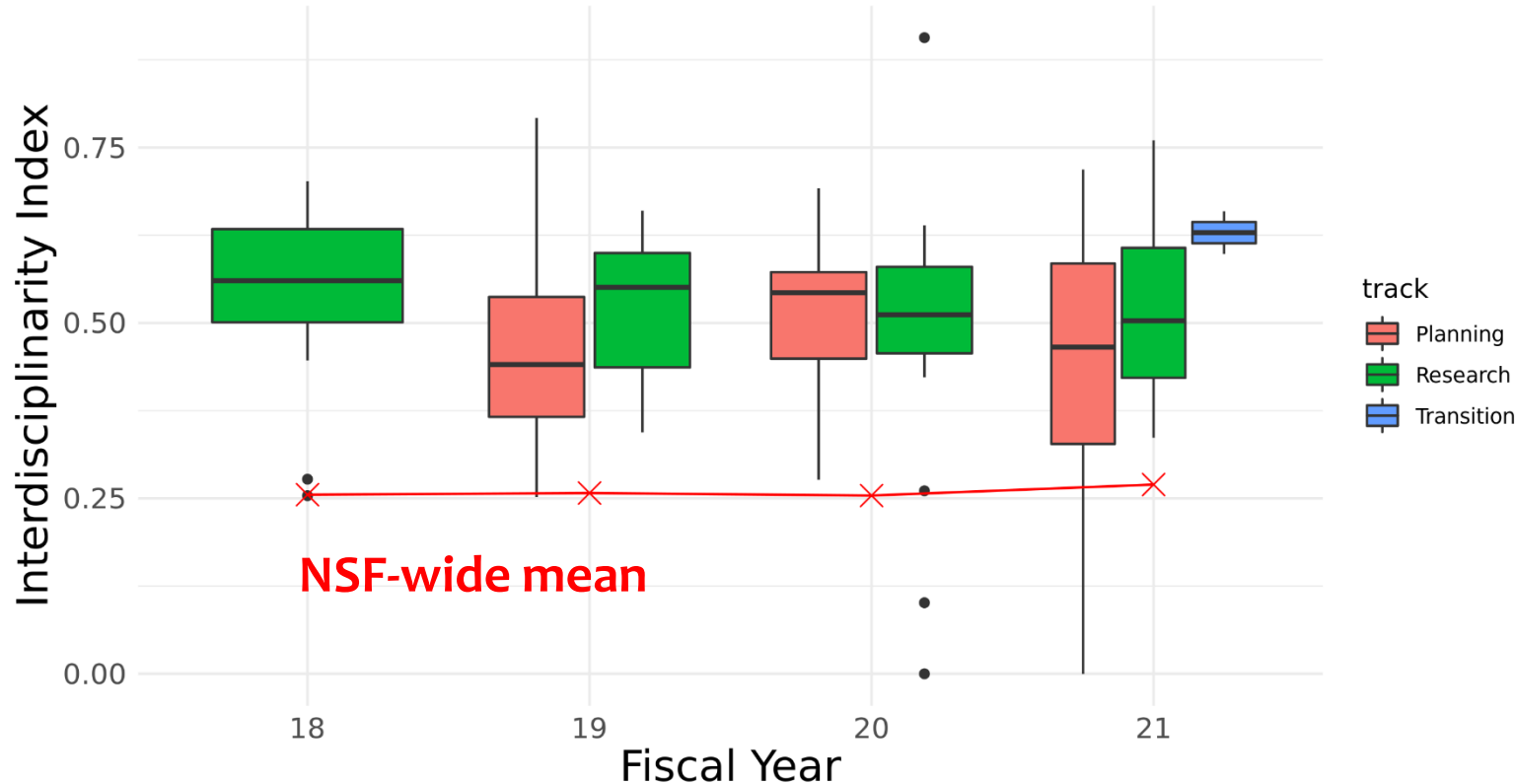
All FY 2021 FW-HTF Awards



- Based on awards received
- Useful project thumbnail
 - Panel balance
 - Portfolio analysis
- No project outcomes

FW-HTF Portfolio Analysis

FW-HTF Award Interdisciplinarity vs NSF-wide mean
Based on Project Team submission history



Interdisciplinarity Index has a range of 0 - 1,
where 0 is monodisciplinary and
1 features all directorates in equal proportion

Shannon's Diversity Index

$$H = -\sum_i p_i \ln p_i$$

or

`vegan::diversity()`

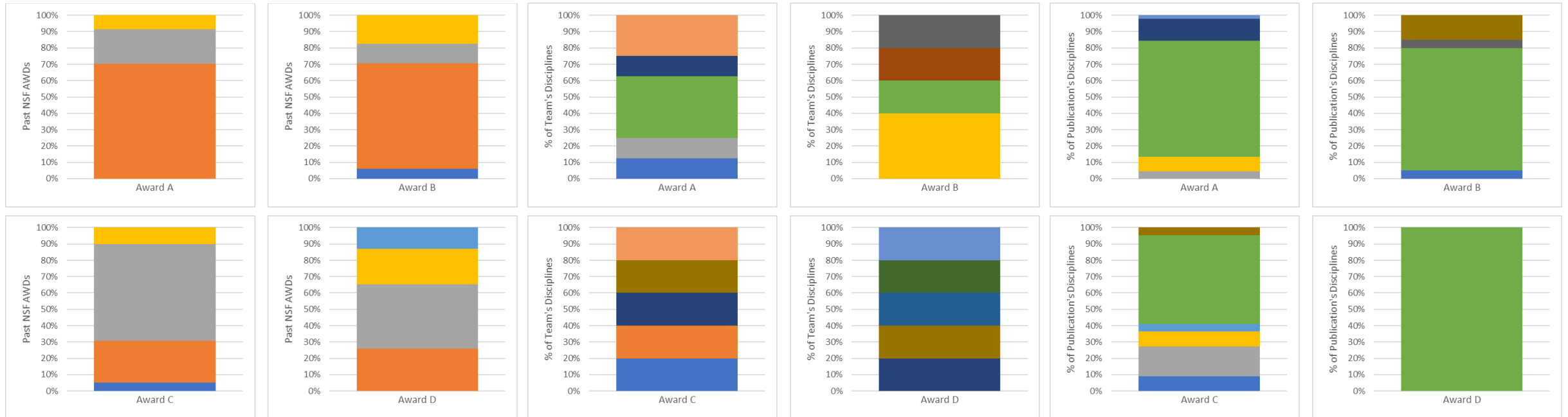
Representing Interdisciplinarity of Products

- Use publications as products
- Track publications that acknowledge award
- Map publications to disciplines
 - Unit of assessment (UoA) codes from UK REF
 - Reported by Dimensions database
 - One measure for entire project
 - OK for ~ 5 years – *what then?*
- In progress:
 - Incorporate individual interdisciplinarity
 - Classification of Instructional Programs (CIP) taxonomy

Compare Measures of Interdisciplinarity

Collectively by Project

TIP EHR ENG CSE SBE



NSF Awards

PI Departments

Project Publications

Compare Measures of Interdisciplinarity

Showing Individual PIs

TIP EHR ENG CSE SBE

